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19 July 1963
Copy 4 of 9

MEMORANDUM FOR: Chief, Geographic Division, ORR
ATTENTION : [REDACTED]
FROM : Chief, CIA/PID (NPIC)
SUBJECT : Copies of Transportation Studies

Declass Review by
NGA.

1. Per your request, duplicate copies of CIA/PID Transportation Studies are furnished herein. The enclosures consist of two studies and seven briefing boards.

2. These studies are in response to specific requirements, and are not to be considered as a complete and comprehensive analysis of the transportation facilities found in the area under review. The China-Burma-Laos Road Complex study is, in general, an analysis of routes which could be used for logistical supply purposes between K'un-ming and the area where the borders of Burma, China and Laos intersect. There are, in addition, answers to specific questions. The questions are repeated in the body of the text, followed by their reply. The study of rail facilities from Thanh-hoa to Son-yu is an answer to a specific request for an evaluation of available photography to determine the status of construction of the Thanh-hoa bridge, and the rail facilities between Thanh-hoa and Son-yu. The requirement also asked if the rail roadbed is being converted to a highway.

3. Also, per your request, additional copies of these projects are also being forwarded to [REDACTED]

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ENCLOSURES:

- (1) Study of Burma, China, Laos Road Complex with Four Briefing Boards
- (2) Study of Rail Facilities from Thanh-hoa to Son Yeu with Three Briefing Boards

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THANH-HOA - SON YEU RAIL STUDY

1. This study is on photographic analysis of the proposed bridge site at Thanh-Hoa which was undertaken to determine the level of construction activity; and also to determine if the old abandoned rail roadbed between Thanh-Hoa southward to Son Yeu is being converted to a highway; or, if the rail roadbed is being rehabilitated as a railroad. A detailed study of railroad facilities between Thanh-Hoa and Son Yeu was also requested.

2. A review of aerial photography [] shows that the bridge north of Thanh-Hoa over the Song Ma, which has been under construction for several years, will still require a considerable amount of work before completion. Briefing Board No. 1, NPIC DH-2910 shows that both approaches and the west abutment are well advanced in construction. However, the east abutment is not so near completion. The large barge in the stream between the abutments, is probably being used in the preliminary work of construction of piers to support the future bridge. Briefing Board No. 2, NPIC DH-2910 also shows that the old rail roadbed south of the bridge construction site is being rehabilitated.

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Briefing Board No. 3, NPIC DH-2911 and DH-2912 were selected to show that the old rail roadbed is being rehabilitated as a rail line and is not being converted to a two-lane highway. Although there is no signs of any track structure (rails, crossties, etc.), the evidences of railroad construction are very clear. The following salient features are listed in support of this thesis:

a. The single-span steel thru-truss bridge shown on Briefing Board No. 1, NPIC DH-2911 is typical of the railroad bridges in use in North Vietnam and not found in use in North Vietnam as a highway bridge. The bridge is so narrow that it would probably be a highway bottleneck, and in addition, the lighter loads encountered on the highway generally do not warrant this type of heavy steel construction.

b. The easy graceful curves found on this roadbed, which are a necessary feature of all rail lines, are in contrast with sharper curves found on the adjacent highways.

c. The rail yards under construction, shown on Briefing Board Nos. 2 and 3, NPIC DH-2911 and DH-2912 are proof positive that the old rail roadbed south from the bridge construction site at Thanh-Hoa is not being converted to a two-lane highway; but rather, that the North Vietnamese are well advanced in this sector in rehabilitating the old meter-gage rail line, which has been abandoned since their civil war.

3. The only rail facilities found on the Thanh-Hoa to Son Yeu section were the bridges, all of which are located on the enclosed graphics, and the new building (possible engine house) located in the yard at Thanh-Hoa.

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MAJOR LOGISTICAL ROUTES BETWEEN KUN-MING, CHINA
AND THE LAOTIAN-BURMESE BORDER

1. This study is in response to your request for an analysis of photography to ascertain the location and condition of roads in areas indicated. The information contained herein includes details on road surface and width. This information is illustrated on appropriate charts for location purposes and selected photo enlargements of the road sections. Also included, where applicable, is additional data of intelligence significance that has been observed in the analysed areas (See enclosures - four briefing boards).

2. The four briefing boards are intended to be used as illustrative materials to support textual information. All roads discussed in this memorandum are shown on the map on each board with their alignment and legend showing surface and width. For ease of handling the study has been arranged in four parts; each section is highlighted with colored zip-a-tone on the map; the accompanying photos included on the boards contain a numbering system corresponding to numbers on the map and are also keyed to the text. The four boards cover the following areas:

- a. Board No. 1 (NPIC DH-2339 (4/63) is associated with the Meng la to Phong Saly road and its branches to Ch'e-li, Meng-P'eng and Meng-mang.
 - b. Board No. 2 (NPIC DH-2337 (4/63) is associated with the K'un-ming to Ch'e-li road.
 - c. Board No. 3 (NPIC DH-2338 (4/63) is associated with the Ch'e-li to Ta-lo road and its branches to Chen-pien and Nan-san.
 - d. Board No. 4 (NPIC DH-2340 (4/63) is associated with the new road under construction between Ko-chiu and Ssu-mao.
3. Detail and description of the roads are as follows:

- a. Meng (Muong) la to Phong Saly Road (est. 95 km) (See enclosure Board No. 1)

A newly constructed or improved two-lane highway proceeds generally eastward from Meng la (21 28N - 101 35E) through Buon Neua (21 37N - 101 55E) across the Laotian border to Phong Saly (21 43N - 102 07E). This road has many steep grades, sharp curves and switchbacks, but appears to be serviceable and in good condition. Photo No.1 shows a section of the difficult terrain through which this road was constructed. The most important structure is the deck-type bridge, [REDACTED] which spans the Nan-la Ho (river) 4.5 kilometers south of Meng-la.

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Obliquity of photography and inaccurate maps preclude exact alignment and determination of width and surface for the entire distance (particularly in the area near Phong Saly).

(1) Meng-La to Ch'e-li (est. 120 km)

This is a newly constructed or improved, graded, two-lane (5-6 meters wide) road probably reinforced with gravel or crushed stone. Photo No. 2 shows engineering details such as width and surface. The road has many steep grades, sharp curves, and switchbacks in its hilly sections, but appears to be serviceable and in good condition throughout. Most of the streams are bridged; however, a few small bridges have not been completed and fords are in use. Two major bridges were observed: one is a two-lane, deck-type bridge, [redacted] spanning a tributary of the Lo-so Chiang (River) at 21 50N - 101 21E. Photo No. 3 shows engineering details of this bridge; and the other is the single-lane, ponton bridge, 54 x 3 meters, which spans the Lo-so (River) at Man-ha kue (21 55N - 101 17E). A ferry is in use, in addition to the narrow ponton bridge, to facilitate crossing the river at this point. Photo No. 4 shows the ponton bridge, ferry, and highway in that vicinity. Photo No. 5 shows the intersection of this road with the Kunming to Ch'e-li highway at 22 04N - 100 55E, 12 km northeast of Che-li.

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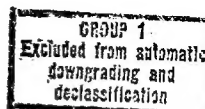
(2) Hsiao-chai to Meng-P'eng (est. 30 Km)

Branching east from its junction with Meng-la to Phong Saly road at Hsiao-chai (21 26N - 101 35E), 2 km south of Meng-la, this newly constructed road proceeds along the north side of the Nan-la-ho (River) to Meng-P'eng (21 25N - 101 22E), where construction ends. The roadbed is graded earth surface 5-6 meters wide, probably reinforced with gravel or crushed stone. At 21 25N - 101 20E, approximately 5 kilometers southeast of Meng-P'eng a single lane (3 meter wide) earth surfaced road proceeds south to Meng-mang (21 18N - 101 20E) where improvements end.

b. K'un-ming to Ta Khee Lek Road (See enclosure - Briefing Board No. 2)

Incomplete film coverage preclude an analysis of all highways between these two points. However, there is sufficient recent and adequate photo coverage to definitely conclude that there is no road which directly connects the Chinese City of Kunming (25 04N - 102 41E) with the Burma-Thailand border town of Ta Khee Lek (20 27N - 99 53E). There is no photo coverage for the area between Ta Khee Lek and Keng Tung (21 17N - 99 36E). However, there is photo coverage for the area between Keng Tung and Ta-lo (21 39N - 100 05E), which definitely reveals that there is no road connecting these two points. A road now connects K'un-ming with Ta-lo, details of which are as follows:

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(1) K'un-ming to Ch'e-li (est. 470 km)

This section of the road is a graded earth surface 5-6 meters wide probably reinforced with gravel or crushed stone. The section of the highway near K'un-ming is laid over flat terrain. (Photo No. 6 shows terrain and details of road construction at Ch'eng-kung (24 51N - 102 47E). However, much of the remaining road between K'un-ming and Ssu-mao (22 46N - 101 05E) is through an area of steep relief with numerous steep grades, sharp curves and switchbacks. Photo No. 7 shows a section of the difficult terrain just north of Ming-ehr (23 03N - 101 05E) through which this road traverses and photo No. 8 shows details of road construction at Ming-ehr.

The section of road between Ssu-mao and Ch'e-li is over rolling hills with grades and curves considerable reduced. Photo No. 9 shows terrain and road construction details on this section and Photo No. 10 shows the junction of this highway with the Meng-la to Ch'e-li road at 22 04N - 100 55E, 12 km northeast of Ch'e-li. All rivers and streams were bridged. Most bridges observed appeared capable of supporting relatively heavy vehicular traffic. At Ch'e-li traffic currently crosses the Mekong River by ferry. Just north of the ferry site a long (est. 310 meter) bridge is under construction. All the piers are completed and work is underway on the abutments and approaches on each bank. Photo No. 11 shows the bridge under construction together with roads and terrain in the vicinity of Ch'e-li.

(2) Ch'e-li to Ta-lo (Est. 90 km) (begin Board No. 3)

Westward from Ch'e-li a two lane (5-6 meters wide) graded earth surfaced road, probably reinforced with gravel or crushed stone extends through Fo-hai (21 57N - 100 27E) to 21 55N - 100 21E, where a junction is formed with a road which proceeds northwestward through Chien Pien (22 33N - 99 59E).

From Ch'e-li to the junction the road traverses river valleys and is over relatively level terrain. Photo No. 12 shows the road in the vicinity of Ch'e-li as well as the bridge under construction over the Mekong River. Photo No. 13 shows a three span 33 meters long covered bridge spanning a tributary to the Mekong River near Fo-hai. Photo No. 14 shows a second 3 span, 35 meters long covered bridge over the same stream at the intersection of this road with the road leading to Chien Pien. At the junction the road turns sharply south to Men-hun (21 48N - 100 23E). This section of the road appears newly constructed, graded earth surface, probably reinforced with gravel or crushed stone. The width of this section is narrowed to 4-5 meters. Some grades, sharp curves, and switchbacks were observed.

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Between Men-hun and Ta-lo the road narrows to 3 meters. This section appears newly constructed or improved with a graded earth surface, probably reinforced with gravel or crushed stone. There were numerous steep grades, sharp curves and switchbacks; however, all stream crossings observed were bridged and the road appeared serviceable throughout. Road construction ends at Ta-lo. Photos Nos. 15 and 16 show details of road construction and varying terrain features encountered on this route.

(3) Ch'e-li to Ta lo Junction (21 55N - 100 21E) to Chien Pien

From 21 55N - 100 21E on the Ch'e-li to Ta lo road, a two lane (5-6) meter) graded, earth surfaced road probably strengthened with gravel or crushed stone, extends northwestward, passing through Meng-man (22 09N - 100 07E), and continues through Chen Pien (22 33N - 99 59E), where obliquity, scale of photography, and poor map details preclude tracing the alignment further. All streams observed were bridged and the road appeared serviceable throughout. Photo No. 17 shows details of road construction on this section and Photo No. 18 shows typical terrain features encountered over most of the route.

(4) Ch'e-li to Man-san

This estimated two-lane (4-5 meters wide) graded earth surface road, probably reinforced with gravel or crushed stone, extends from its junction with the Ch'e-li to Ta-lo road approximately 2 km west of Ch'e-li, southward to Man-san (21 30N - 100 38E), where construction ends. All major streams observed were bridged and the road appeared serviceable throughout. Photo No. 19 shows a long section of this road near Man-san.

c. In addition to the requested road search, the following road has been observed to be under construction.

(1) A new road is currently under construction which will connect the rail terminus at Ko-chiu (23 22N - 103 10E) with Ssu-Mao. When completed, this road will provide an important alternate route (in addition to the Kuning-Ssu-Mao road) for traffic flowing into this border area from China. Proceeding west from Ko-Chiu, this two-lane (5-6 meters wide) graded earth surface road, probably reinforced with gravel or crushed rock, traverses rough hill country or relatively steep relief. Photo No. 20 shows some of the grades and curves as well as the type of terrain encountered in this area. Construction has reached approximately 23 09N - 102 33E as shown on Photo No. 21.

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(2) Eastward from Ssu-mao through Chiang-Ch'eng (22 34N - 101 52E) to Lo-sa (22 44N - 101 54E), the road is constructed to the same engineering standards as the other section proceeding west from Ko-chiu. A short distance (approximately one kilometer) east of the terminus of construction a bridge is being built to span the Black River. Photo No. 22 shows the bridge under construction and also a narrow foot bridge spanning the Black River near the bridge construction site. Photo No. 23 shows a section of the highway, approximately one kilometer west of the bridge construction site, which is currently under construction. This photo shows details of road construction as well as terrain in this area.

(3) Southward from Chiang-Ch'eng a narrow (3 meters wide) unimproved road extends approximately 10 kilometers. Beyond this point the road becomes a narrow trail. Two major bridges were observed on this section of the new road. A deck-type arch bridge 91 x 6 meters over the Lo-so Chiang (River), approximately 13 kilometers west of Chiang-Ch'eng; and a shorter (66 x 6 meters) deck-type arch bridge at 22 33N - 101 28E. Photo No. 24 shows the 91 meter bridge and Photo No. 25 shows the 66 meter bridge. Photo No. 26 shows construction details of the road and typical terrain features encountered in the vicinity of Ssu-mao.

(4) Meng-La (Muong-la) to Vien (Vieng) Phou Kha (20 35N - 101 05E) to Muong Sing (Muang-Sing) (21 09N - 101 08E)

Obliquity, scale of photography and poor map details preclude a detailed analysis of the entire area; however, no roads were observed connecting these three towns which were capable of carrying automobile or truck traffic, and no construction activities were observed. The only "roads" observed in this area radiated from Muong Sing for a very short distance. It was impossible to determine whether they were improved roads, or whether it was only the rural traffic converging from many trails which gave width and light tone to the surface. These roads blended into pack-animal trails a short distance from Muong Sing.

(5) Sam Neua to Phong Saly to Nam Tha

No roads and only a few trails were noted in the mountainous stretch of terrain between Sam Neua (20 25N - 104 02E) and Phong Saly (21 43N - 102 07E).

In the area between Phong Saly and Nam Tha (20 57N - 101 25E) numerous pack animal trails, sometimes widening to jeep trails and short section of unimproved roads were observed. Obliquity, poor scale and inaccurate maps preclude an exact analysis of the entire terrain between these points, however, no through road was observed, which was capable of carrying automobile or truck traffic, between Phong Saly and Nam Tha. (End Board No. 4)

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